

THE AMERICAN JOURNAL OF OPHTHALMOLOGY

VOL. XXVI.

JANUARY, 1909.

No. 1.

ORIGINAL ARTICLES.

ROENTGEN RAY DEMONSTRATIONS OF THE LACRIMAL ABSCESS CAVITY.*

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The method of employing emulsions of bismuth subnitrate and the Roentgen ray for locating and determining stomach disorders has suggested this attempt to find in a similar manner the size and shape of the cavity of the lacrimal abscess, with the hope that some knowledge of its hidden recesses might be obtained which would aid in its more skilful management. Speaking of the burrowing of the pus, Theobald, in Norris and Oliver, says, "In other exceptional instances the perforation occurs through the inner wall of the sac: under such circumstances the pus has been known to find its way into the nasal meatus and even into the maxillary antrum; in one case, reported by Power, it burrowed between the periosteum and the bone, till at length it reached the floor of the nose and established a fistulous orifice into the mouth through the palatine suture of the palatal bones." "Other cases have been observed in which the pus, after escaping from the sac, has burrowed beneath the integument of the face and has finally perforated the skin near the ala of the nose or at some distant point upon the cheek."

*Reported to the Ophthalmic Section of the St. Louis Medical Society, January 13, 1909.

I have seen one case in which the whole lacrimal bone had become loosened from the adjoining bones and presented in a fistulous opening over the region of the sac through which it was removed. In another instance the lacrimal bone seemed to have become necrotic to the extent of permitting the abscess to involve the cells of the ethmoid, judging from the great depression made when the pus was wholly evacuated through the canaliculi.

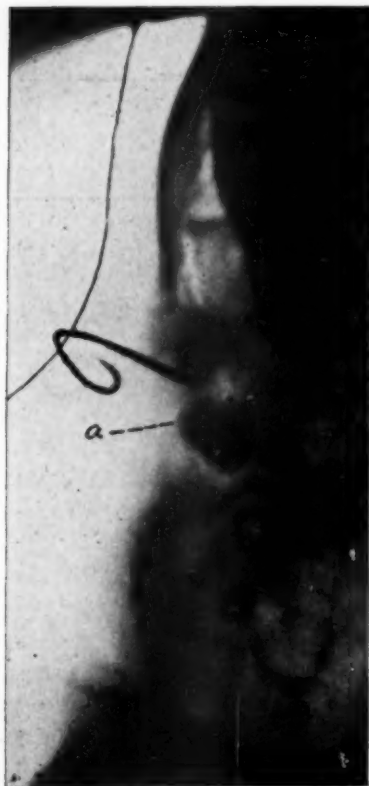


Fig. 1.



Fig. 2.

The demonstrations here presented are Roentgen ray pictures of abscess cavities filled with an emulsion of finely sifted bismuth subnitrate in albolene which was injected through the canaliculi with a syringe. Two pictures are given of each case (Figures 1, 2, 3, and 4), one without the probe and the other with it inserted in order to show the relation of the main portion of the abscess to the track of the lacrimal canal. In each of the half-

tones (a) indicates the abscess. To complete the picture in all directions an antero-posterior exposure would be necessary, but this is difficult because of the mass of bone tissue through which the exposure would have to be made. For comparing the diseased with the normal, a picture of the normal sac is also given (n, in Fig. 5). Here the bismuth distributed itself very sparingly because of the ease with which it could flow away, and so

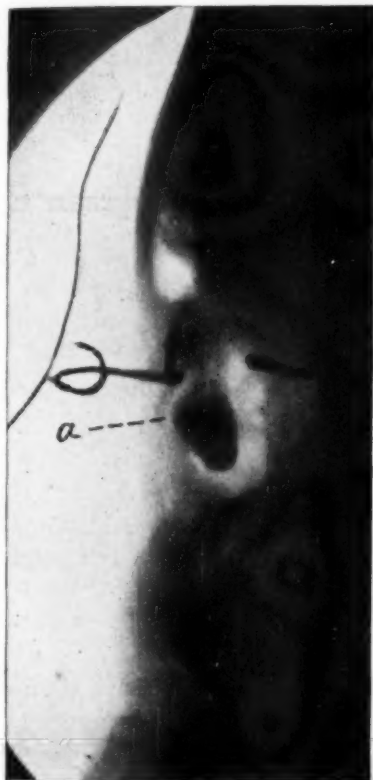


Fig. 3.

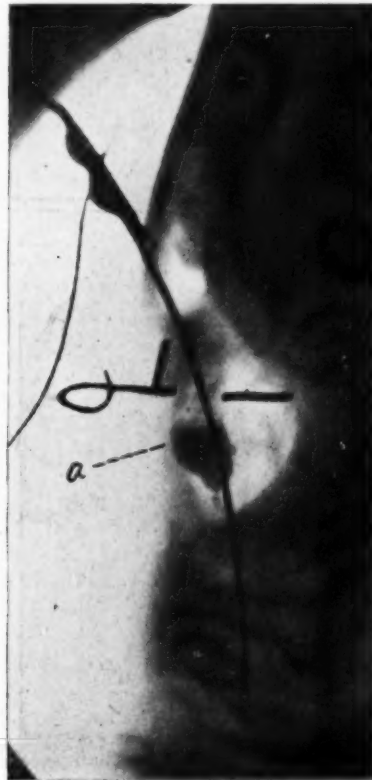


Fig. 4.

sparingly in the duct that this is not distinguishable for its full length. The diseased sacs, each of which has been affected for about three years, are larger and more irregular than the normal, and in figure 4 the bismuth is separated from the probe in the lower portion of the sac or the upper portion of the duct for a distance of two millimeters or more, as if there existed here a pocket which is not wholly evacuated by the probe and which

may be a constantly re-infecting source from which relapses arise. In figure 2 there is a bulging backward, as if there was a tendency to extend into the ethmoid. The sacs are not wholly filled, probably because of the bismuth settling and the oil rising to the top. This, however, would not militate against the method for diagnosis, as the pus usually seeks the lowest and easiest channel and this the bismuth would readily follow.



Fig. 5.

For the excellent Roentgen ray plates I am indebted to Dr. Carman, who permitted me for my own guidance to use fuse wire, held in place by adhesive plaster, to locate definitely certain points. The left end of the short nearly horizontal piece is at the external angle; the short nearly vertical one rests upon the upper lid with its lower end against the cilia; the end of the long leg of the section that is looped is at the inner angle and the long vertical curved one to the left gives the nasal contour.

A CASE OF RETROBULBAR OPTIC NEURITIS,
WITH REMARKS.*

By J. HERBERT CLAIBORNE, M.D.,
NEW YORK.

A strong healthy woman of 45 awoke one morning and found something indefinite the matter with her left eye. A week or more afterwards it occurred to her to open her left and shut her right eye to see if her sight was affected, when she found that her left vision was quite dim. She could find no explanation for the fact and after it had persisted for 3 weeks she concluded to get medical advice. She lived in New Mexico. She consulted local authority without satisfaction and then went to Chicago where she saw several eye surgeons. As their opinions conflicted she concluded to go to New York.

I saw her about one month after she had observed the dimness of sight. She stated she had always been a strong woman and lived an outdoor life, was a widow and had had one child.

I found the pupil normal; likewise the tension; there was a small linear opacity of the lens about 2 mm. long and 1 mm. wide to the outer site of the lens and downwards. It appeared to be of long standing. The optic disc was blurred and the nerve slightly swollen, both arteries and veins were swollen, the latter particularly. There was, in short, a mild optic neuritis. The field was almost normal except upwards where it was contracted; I attributed this to the very prominent brow. Her central field for colors was slightly modified; she recognized red but called green blue. The vision was 20/200. She was unable to give any explanation of the condition, but after careful questioning I elicited the fact that the night before the morning on which she remarked the dimness she had washed her hair and slept in a draught.

She said further that her eyes felt stiff and that it pained her to move them in the sockets. This symptom, however, passed in a day or two. There was no headache and no symptoms of an acute cold.

She had never had any trouble with her nose or accessory sinuses. She complained of an ill-defined scotoma upwards, for which I could never find an explanation, and this persisted as

*Read at the meeting of the Section on Ophthalmology, New York Academy of Medicine, in November, 1908.

long as she was under treatment. I kept her pupil dilated and put her on iodide of potassium, going as high as 175 grs. t. i. d. At the end of a month her sight had risen to 20/30. At this time I told her that I did not think I could improve it any further and that I could not find the cause for the scotoma, when she became dissatisfied and left for home. Of course, it is just barely possible that it was caused by the opacity in the lens, but I doubt it. The optic neuritis gradually got better *pari passu* with the improvement of the sight, but I could not persuade myself that there was any pallor of the nerve temporally or in general. When she left the fundus was normal in all respects.

Such is the history of this case which was a classical one of acute retro-bulbar optic neuritis. If there is any symptom lacking to make the picture perfect it is the usual slight dilatation of the pupil and strongly marked central scotoma for both green and red. Green is usually called gray by those who have central color scotoma, whereas it was called blue in this case. I did not see the case until three weeks had passed, and it is not improbable that I would have remarked a sluggish pupil, also, had I seen her at once.

At the time that I saw her there was no tenderness on pressure upon the eye-ball, but as this is usually a symptom of the acute stage it is not surprising that it was not present at that time.

This is the first case of retro-bulbar optic neuritis that I have ever recognized, but I do not doubt that I have seen this affection many times without recognizing it. It is safe to say that there are many here who have had the same experience that I have. The text-books are singularly barren in their descriptions of this condition. Many of them say nothing at all. All those which describe it, however, divide the causes in general into two kinds—systemic and local—the latter due to extension from the accessory sinuses; the sphenoid, the ethmoid, the frontal and antrum. Some state, also, that it may arise from a simple rhinitis. Under these circumstances the diagnosis is generally made, for it is a simple thing to refer a papillitis, occurring in conjunction with contiguous sinus trouble, to it as the cause. In the great majority of cases, however, the examination of the central color perception is not made and the case is generally dismissed as a neuro-retinitis without its true nature having been recognized. The great majority of cases of so-called neuro-

retinitis following grip have been ascribed to the grip but they have not been called acute retrobulbar optic neuritis. Yet, the evanescent character of the complication should mark it as different from the ordinary neuro-retinitis. It is to be hoped that in the future the central color perception will be recorded in these cases. All authorities agree that it may be caused by cold without other complications, but Ball also cites gout, rheumatism, syphilis, typhoid fever, carcinoma of the stomach, lead poisoning, diabetes, the sting of a scorpion (one case), and tuberculosis. Fuchs says, "An idiopathic inflammation of the optic nerve is supposed to exist in disseminated sclerosis in which retrobulbar optic neuritis often occurs as an early symptom."

This observation is supported by the conclusion of Holden in a recent issue of the *Journal of the American Medical Association*. The prognosis is in general good, particularly in the idiopathic form, but of course in the secondary form it depends somewhat on the inflammation of the contiguous sinus from which it is propagated. Blindness has been reported and at times a persistent central scotoma for green or red, or both, or an absolute central scotoma, remains. When the latter occurs the usual triangular patch of atrophy to the outer side of the nerve appears and the final picture in this respect exactly resembles that of the tobacco-alcohol amblyopia.

Parsons and de Schweinitz both say that at times there is slight degeneration of the ganglion cells of the retina.

The treatment, of course, depends on the cause; in those cases which are secondary to sinusitis the treatment of that condition is, of course, the treatment of the optic neuritis. In the idiopathic form, however, I should think that iodid of potassium is indicated in doses sufficient to achieve absorption of the exudation.

The case which I have described was evidently due to cold, and I am strongly inclined to think that all cases which occur after taking cold are caused by the extension of the inflammation from the nasal mucous membrane. Though my patient did not report a cold in the head it is highly probable that sleeping in a draught with the hair wet caused some acute rhinitis.

And I think that the cases which are reported as due to cold may be explained in this way. Those cases which occur in typhoid, tuberculosis, syphilis, rheumatism, lead poisoning, etc., can only be attributed to the systemic effect of the poison in each

case, as in tobacco-alcohol amblyopia, except that the course in the former is often rapid, acute and occurs suddenly, whereas in the latter it is slow and chronic. In contemplating the whole subject, however, it is difficult to resist the suspicion that all cases, even of retrobulbar optic neuritis due to systemic poison, have a beginning that is very similar to the onset of acute retrobulbar optic neuritis. And if that suspicion is correct then acute retrobulbar optic neuritis is simply the beginning of an inflammation which becomes quickly resolved and does not go on to the chronic form. This idea is further supported by the fact that at times there is atrophy of the papillo-macular bundle of nerve fibres following the acute form and that the central scotoma for colors often disappears in the chronic form. Though we do not see papillitis in the toxic form as for instance in tobacco-alcohol amblyopia, yet we do frequently see intense congestion of the disc.

While I do not think that definite conclusions are justified, I may be permitted to sum up my views on this subject in this way:

1. Acute retrobulbar optic neuritis may occur.

- (a) As an extension of an acute inflammation from the nasal mucous membrane or the contiguous sinuses.

- (b) As the result of intoxication of the general system from various causes.

2. The acute optic neuritis which follows grip and is usually recorded in these terms is probably an acute retrobulbar optic neuritis and is caused either by an extension of inflammation by continuity from the Schneiderian membrane which is always involved, or by systemic infection or a combination of both.

3. While the symptom complex of acute retrobulbar optic neuritis is well marked and is entitled to individual recognition, its relationship to the chronic form known under the name of retrobulbar optic neuritis or toxic amblyopia appears not to be definitely defined and further research is necessary to define that relationship.

SOME INTERESTING TUMORS.*

By ADOLF ALT, M.D.,
ST. LOUIS, MO.

The first tumor I intend to demonstrate to you is one for which I am obliged to the kindness of Dr. F. L. Henderson. As you will see, it is a tumor of unusual interest, and I have not been able to find its counterpart in literature.

The following note was written by Dr. Henderson on January 22d, 1908, relative to the specimen which came to me in a 5 per cent. formol solution:

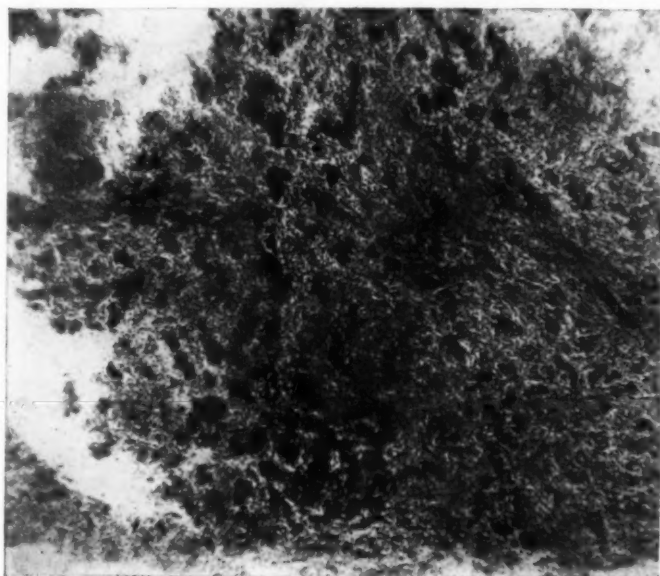


Fig. 1
Appearance of the tumor under low power.

Patient was a young lady, 15 years old, well developed and healthy in every particular. About one year ago the right upper lid began to swell and gradually got worse until when seen by me on December 11th, the enlargement of the upper lid had reached proportions which made it difficult for her to raise it far enough to see out of the right eye. In the right upper sulcus,

*Read and specimens demonstrated at the meeting of the St. Louis Ophthalmological Society, December 14th, 1908.

there was a freely movable tumor about the size and shape of a malaga grape. The afternoon of the 11th of December I cut down upon the tumor and found it enclosed in a thin capsule; it was quite easy to dissect all around it, but it seemed to be firmly attached at one point underneath; this attachment I had to cut with scissors. Just before getting it entirely loose from its position, the capsule ruptured, and the fatty looking contents prolapsed.

The additional history given is the following:

"June 5th, 1908, the patient was again seen. The tumor had



Fig. 2.

Showing the arrangement of the unstriped muscular cells and apparent giant cells.

returned, but was not as large as before. The return of the tumor had been noticed already in January, 1908, about one month after its removal. Dr. Alt having reported that the growth was sarcomatous, I advised a radical operation, which was refused. However, on October 21st, 1908, the patient again submitted to the removal of the growth, but the removal of the eye-ball was not permitted. The same kind of tissue was encountered as in the first operation, but this time it was found to reach back to the apex of the orbit. As much as possible of it was removed. The patient has not been seen since the healing of the wound."

When the primary tumor reached me there were two portions, one roundish of the size of a large hazelnut, and another thinner and long strip which, as further examination showed, was the part nearest the tarsus of which it included a strip.

On being cut in two the tumor appeared liked a sponge, showing many openings of cavities varying in size and apparently empty.

In the microscopic section a very peculiar appearance, and one which I have never seen before, was noticed, namely, small bands of elongated cells with an almost rod-like nucleus, looking

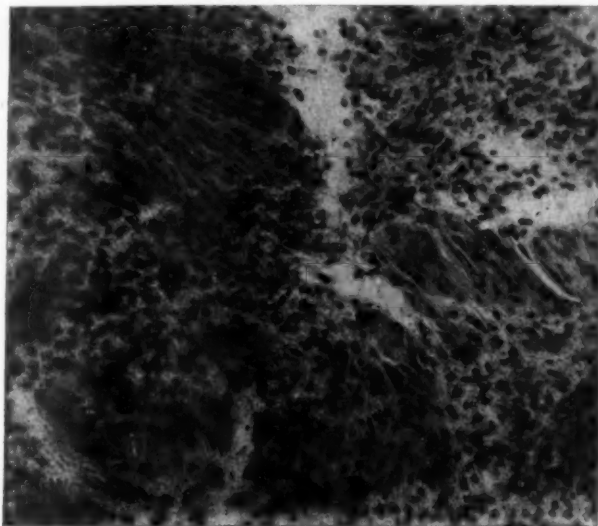


Fig. 3.
Muscular cells and round cells.

more like unstriped muscular cells than anything else. The peculiar arrangement was that the cells in these bands were lying parallel to each other and, so to speak, piled up like coin in rolls. Where such bands of cells had been cut obliquely, they gave the appearance of giant cells having some nuclei on one side near the periphery. Although some to whom I showed the specimens at first thought that this was simply a sarcoma with a great many giant cells, it was quite easily demonstrable that they were mistaken. In fact in the very numerous sections I succeeded in finding only one large and real giant cell. (See Fig. 1, 2 and 3.)

Evidently these peculiarly arranged bands of cells were separated more particularly in the periphery of the tumor by sarcoma cells which on teasing proved to be large round cells and myxomatous cells. Nearer the centre of the tumor and more especially near its attachment to the tarsal tissue whole portions consisted of tightly packed and interwoven long spindle cells with a rod-like nucleus almost to the exclusion of the other cells. (See Fig. 4.)

The cavities in the tumor were of two kinds, some were evidently enlarged bloodvessels, others contained blood without having the walls characteristic of bloodvessels; some cavities have

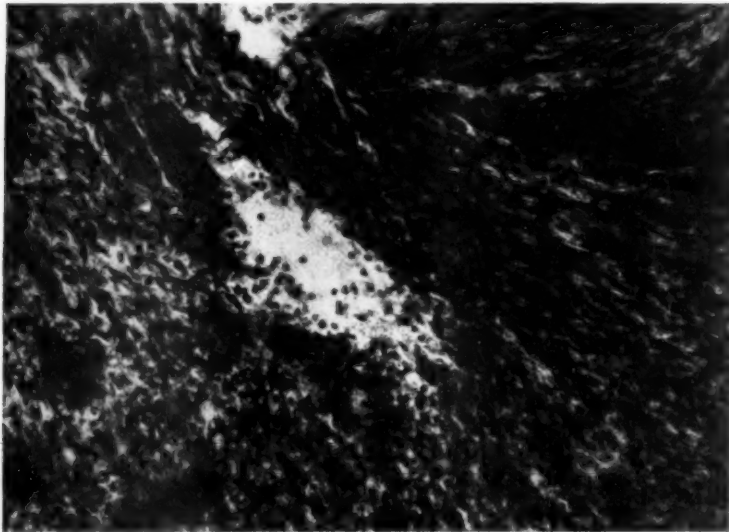


Fig. 4.

To the right a mass of muscular cells, to the left a number of apparent giant cells.

probably contained some colloid or myxomatous material during the formation of the growth. I have not found a single bloodvessel in the tumor showing the characteristics of a normal artery, but a great many bloodvessels partly surrounded by unstriped muscular cells in such a manner that it appeared as if the muscular wall of the bloodvessel had proliferated into the neighborhood. In a similar way the large blood cavities have probably been formed.

I gave it as my opinion that the tumor was sarcomatous and the history proved this to be correct.

The portion of the tumor removed at the second operation showed the same tissue as the first one, especially the arrangement of the unstriped muscular cells was just the same and as characteristic as in the primary tumor.

The tumor then, in my opinion, is a malignant leiomyosarcoma.

Nowhere have I been able to find a description or picture of just such a tumor. The nearest approach to it is a drawing by Hanseman in his "Mikroskopische Diagnose der bösartigen Geschwülste" (microscopical diagnosis of malignant tumors) on page 57, Fig. 25). He states that he has, besides the de-

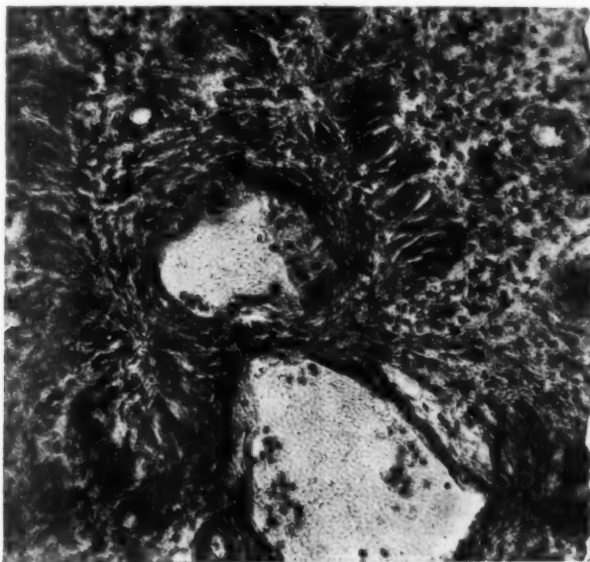


Fig. 5.
Showing how in many places the muscular cells seem to grow from bloodvessel walls.

picted one, seen 5 similar cases of malignant myoma or myosarcoma, 3 in the stomach, 1 in the intestines, and 1 in the uterus.

From this it is clear that this form of malignant tumor is rather rare, and probably still rarer in the tissues of the eyelid. It is not quite clear from what preformed muscular tissue the tumor has taken its origin. It is natural to think of Mueller's muscle. Yet, from many parts of the tumor it seems that the muscular coat of the bloodvessels may have been the tissue from which the muscular portion of the tumor has taken its origin. (See Fig. 5.)

The following tumor I owe to the kindness of Dr. W. A. Shoemaker. It was accompanied by the following remarks.

"J. L., aged 26, consulted me October 23d, 1907, giving the following history: Seven years ago he noticed a small growth on the temporal side of the right eye which has gradually been increasing in size. About six months ago he noticed a pigmented spot on the upper part of this growth. The eye has never given him any discomfort.

St. Pr.



Fig. 6.

Melanosarcoma of the conjunctiva bulbi, resulting from a naevus.

V.O.D=17/15. Nothing abnormal was found in the eye with the exception of this growth, which is fleshy in appearance and situated on the temporal side. It is about 6 mm. by 7 mm. in size and encroaches on the cornea to the extent of about $2\frac{1}{2}$ or 3 mm. There is a pigmented spot, about 2 mm. square, on the superior portion, involving the conjunctiva and episcleral tissue. The main portion of the growth is attached to the sclera.

The growth was removed under a local anæsthetic. The wound healed kindly and on Dec. 18th, 1907, the date of his

last visit, there was still some conjunctival injection but no evidence of a return of the growth."

This specimen which in the hardening process had curled up so that the section did not give absolutely perfect pictures of the relationship of its different parts, consisted to a large extent of conjunctival tissue somewhat hyperæmic and infiltrated. In one portion a small tumor was encountered. This was covered with thickened epithelium with a somewhat papillomatous arrangement. The cells of which this tumor consisted were small round cells intermixed with numerous chromatophores of varying shapes, containing a dark brown granular pigment. In some



Fig. 7.
In the upper part the nests of "naevus cells" are seen.

parts cell nests are found which appear like epithelial pegs cut transversely, only the cells are not of epithelial character. (See Fig. 6.)

Parsons (Pathology of the Eye, page 128) calls them epithelioid cells, the so-called "naevus cells," and adds under Fig. 65: "They are in close relationship with the superficial epithelium, though apparently independent of it." (See Fig. 7.)

The tumor is a melanotic sarcoma of the conjunctiva bulbi (chromatophoroma, Ribbert), probably having originated in a

nævus which carrying no, or little, pigment near the surface had not been noticed by the patient.

The third tumor I removed from the caruncle of the left eye of a woman 40 years old. She said that for years she had noticed a little "dirty" spot in this locality, which she often tried to wipe off, but could not. That of late it grew larger, annoyed her and was at times painful. A year previously I had removed the right eye on account of a choroidal sarcoma.

The little tumor appeared brown and had the shape of a pin-head. It was flat on the surface. Operation and healing were of no interest.

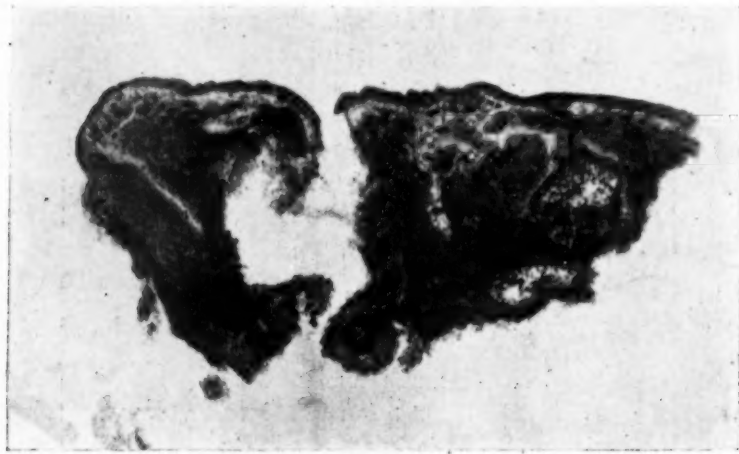


Fig. 8.
Melanosarcoma of the caruncle.

The little tumor consists chiefly of round cells among which there are a great many chromatophores. Some of the latter are quite large and of grotesque shape. Embedded in the sarcomatous tissue are several sebaceous glands undergoing regressive metamorphosis and a large pigmented hair. (See Fig. 8.)

The patient died a few years later of pneumonia. Up to her death no recurrence of the growth has been observed.

This evidently was also a melanotic sarcoma which had taken its origin from a nævus.

The fourth tumor I removed from the right upper eyelid of a young man, about 18 years of age. He stated that he had had a small whitish elevation on this lid, situated about its middle,

ever since he could remember. Of late he thought it had grown somewhat larger and felt sore.

I found an elevation as he had described it, looking yellowish white, surrounded by hyperæmic skin and somewhat painful to the touch. As he desired its removal, I complied with this request.

Microscopically I found this little tumor to consist of three separate little cysts. These cysts showed no connection with the glands of the skin and were lined with thick layers of surface

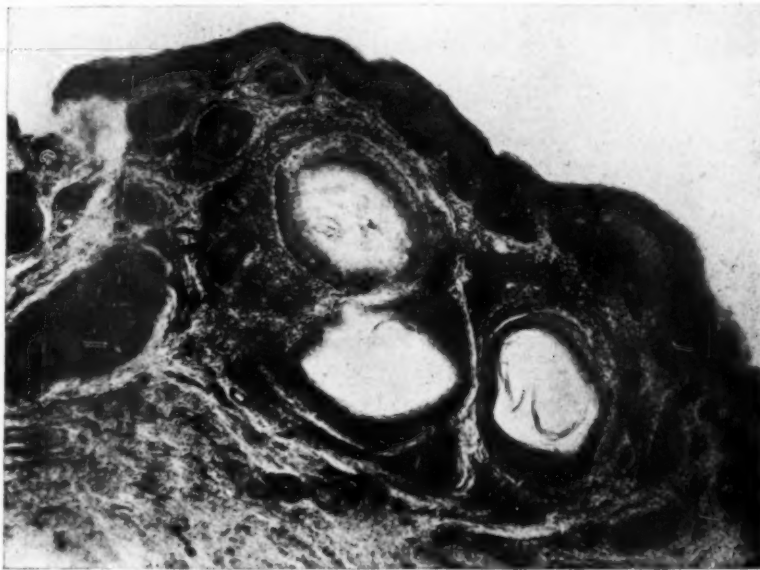


Fig. 9.

Dermoid cyst. The lanugo hair in the left upper one does not show so plainly in the reproduction.

epithelium, the lamellæ layers being horny. In one of them a number of lanugo hair were found. (See Fig. 9.)

Thus we have to deal here with three separate little dermoid cysts in the skin of the upper eyelid, the hair proving that they are not of glandular origin.

The surrounding tissue was greatly infiltrated and evidently in a state of inflammation.

Parsons says (*Pathology of the Eye*, Vol. I, p. 28): "Dermoid cysts are really orbital tumors which press forward the lid." This description, of course, does not fit our case.

OBITUARY.

ISIDOR SCHNABEL.*

BY DR. HANS LAUBER.

Translated by Adolf Alt.

On December 4th, Hofrath Professor Isidor Schnabel died suddenly on his way to the hospital in which he had started his professional career and where he had worked for so many years. With him one of those personalities passed away which were most intimately connected with the Vienna Medical School, from which they derived their force and to which they in turn brought renewed force.

Born November, 1842, at Neu-Bydsov in Bohemia, Schnabel passed through the Gymnasium at Prag and then entered the Vienna University where in 1865 he graduated as Doctor of Medicine and Surgery. Immediately after, he took the position of an aspirant at the General Vienna Hospital where he began his professional career in the surgical department of Zsigmondy. After a short service in the internal section of Haller he entered the eye department of E. von Jaeger in June, 1866. Here he worked together with Mauthner and received his special training from these two oculists, as also much stimulation from their personal contact. In 1871 Schnabel qualified as privat docent at Vienna, in 1877 he was called as professor ordinarius to Innsbruck; after ten years of labor at Innsbruck Schnabel accepted the chair of ophthalmology at Graz, in 1892 the one at Prag and in 1895 was called to Vienna to the head of the I. Eyeclinic in Vienna. Here he was in reality the successor to Stellwag, since Mauthner had died suddenly after being nominated.

Schnabel's literary work touched various fields of his special science and was more fruitful than is usually accepted, even by his special colleagues. Many of his shorter articles the contents of which are in part of great importance, he published in Austrian medical magazines, and thus their distribution remained limited and they became difficult of access, especially to the readers in the German Empire.

*Wiener Klin. Rundschau, No. 51, 1908.

Coming from the school of von Jaeger, the best ophthalmologist of his time, Schnabel in his works occupied himself especially with internal eye diseases. Among his very first papers are some which deal with studies concerning myopia and glaucoma, the two subjects to which throughout his life Schnabel paid special attention. Concerning these two questions he carried forward the ideas of his teacher, von Jaeger, who before him had held the opinion that myopia was in many cases due to an inherited condition. With this opinion von Jaeger was in opposition to that of most men of his time who saw in myopia the consequence of nearwork and especially of accommodative spasm. In his first papers even Schnabel denied the existence of a spasm of the accommodation in short-sighted eyes and promulgated the opinion that myopia is in reality a disproportion between the axial length of the eyeball and the posterior focal distance of the dioptric apparatus, and that with a normal condition of the eye it may develop from a frequently inherited tendency of growth. Based on clinical observations and anatomical examinations he successfully opposed the idea that the conus is the effect of the pulling of the ciliary muscle on the interior membranes. On the contrary he held that the conus is an inherited condition and develops on the basis of an inherited tendency. He did, however, not deny the influence of nearwork on the development and increase of myopia, but he did not accept the many theories promulgated by others and expressed his opinion openly and distinctly.

In a later paper, written in conjunction with Herrnheiser, on staphyloma posticum, conus and myopia, he expresses himself even more emphatically concerning the inherited tendency of myopia and demanded the separation of school myopia from staphyloma posticum with deleterious consequences, a point which now is probably generally acceded to.

While it is easy to recognize in the opinions of Schnabel on myopia a steady progress in one direction, it is much more difficult to analyze the growth of his theories on glaucoma. To be sure, one thought, if of negative nature, goes like a red thread through all of his papers on glaucoma, that is the negation of the sole influence of the intraocular pressure on the formation of the glaucomatous excavation.

Like von Graefe and von Jaeger he is of the opinion that amaurosis with excavation of the optic papilla must be con-

sidered as glaucoma. From this acceptance of a uniform cause of all optic nerve excavations and the knowledge that in amaurosis with optic nerve excavation the increase of the intraocular pressure is lacking, Schnabel came to the conclusion that the glaucomatous excavation could not be looked upon as an excavation due to pressure and that thus Heinrich Mueller's theory must lose its value. By means of numerous and very exact clinical observations and anatomical studies the opinion developed in Schnabel that, the closure of the filtration angle, also, could not deserve the important place given to it by Knies and the later observers. He looked upon this condition as the result of, not as the cause of glaucoma. While Schnabel thought that it was the duty of the scientific worker to simply describe facts and to let the thinking reader infer the conclusions to be drawn from their natural grouping, and thus was decidedly averse to the formulation of theories and hypotheses, he once abandoned this principle and advanced a theory of the genesis of glaucoma which he later on repudiated. This was the assumption that glaucoma is a neurosis with deleterious influence on the blood circulation of the interior of the eye which would lead to vascular degeneration in the iris and retina, and thus would produce an obstacle to the circulation. The result of this obstacle would be an increase of pressure in the bloodvessels and its further consequence the increase of the intraocular pressure. With these studies on glaucoma Schnabel has enriched our knowledge through valuable clinical and anatomical findings. In the last few years a previously occasionally encountered peculiar appearance of the glaucomatous atrophy of the optic nerve, led him to the assumption of a special specifically glaucomatous degeneration of the optic nerve. The lacunar degeneration of the optic nerve in glaucoma and the clinical data on the origin of the glaucomatous excavation in his last published paper served only to support him in his explanation of the glaucomatous disease of the optic nerve as a primary process, independent of the other symptoms of glaucoma. Schnabel was perfectly conscious of it and confessed it in his usual open manner, that he could not explain the ætiology of glaucoma and its real character and would not formulate any hypothesis. His opinions on glaucoma put him in a separate position by himself which, however, he knew how to defend with constancy, admirable facility and logic.

The extreme acuteness of his critical mind for which delving

in Kant's philosophical works formed a recreation after the day's labors, permitted him to recognize with ease the weak points in theoretical deductions, and often prompted him to make studies of his own. With this, he knew in a masterly way, how, to detail in short form and with extremely logical consequence the main symptoms of any condition. Whoever has read his little article on "Two cases of strabismus" was surprised at the apparent simplicity of the explanation and of the power and force of the proofs. These peculiarities of his descriptions which reached their height in his papers published in the last two decades of his life, demand a not inconsiderable mental effort on the part of his readers, but also, afford him great enjoyment.

As Schnabel mastered writing, so was he master in the art of speaking. By right he was considered the best orator among the academic teachers of the faculty. The acuteness of the mind and of the criticism, the pregnancy of expression combined with a manner of expression complete in its form, his broad education and high idealism gave to his speech a captivating power. Whether he spoke at some festival as the orator, or as an academic teacher, or made a political speech, the eyes of the audience hung on his lips. His lectures were of a broad conception and he knew, without sacrificing details, how to bring before the hearer the character of the symptoms and their causal relations as a whole. His lectures, furthermore, were free from petty pedantry, although he put great store by a logically correct expression. This was the reason that as examiner he was sometimes held in awe, although he judged the knowledge of the candidates mildly. Nothing could offend him but neglectfulness, laziness of thought and untruthfulness, things which were alien to his innermost being, even directly opposed to it. In such cases his criticism from being sharp could change to being merciless. Such emotions, however, were the best proof of the high ideals with which Schnabel thought of the duties of the academic citizens and of those physicians whose education he tried to further with the greatest zeal. A complete gentleman, he ostracized in the sharpest manner possible the mercantilism which here and there appears in medical circles. To his patients he was not alone a professional adviser, but also a benevolent friend, who paid the strictest attention to his duties. Therefore, he devoted nearly all his working faculties to his clinic. He never

tired in examining patients, no case escaped his observation and thus he put his personal stamp on the whole clinical work.

The strong sense of duty of which he was possessed, he also demanded of his assistants, and even a small omission could arouse words of severe reprimand. However, to whoever worked zealously toward the same ends which represented Schnabel's ideals, he was a friend on whom to count. Being wrapped in himself he made few words, yet his pupils felt that he was their friend. The independence of mind which Schnabel had preserved he, also, expected of his pupils; in their works they were not simply the supporters of his opinions, no, he never robbed them of the freedom of expressing their own thoughts, even if they did not agree with him. When asked for it, he was not niggardly with his advice and criticism, but always spared the pupil's mental independence.

Like hardly anyone else, Schnabel united a retiring character with a winning amiability. Despising hollow exteriorism he lived and worked quietly, unobtrusively, in a certain retirement from humanity in general and from his special colleagues. Thus he came personally forward but seldom, never attended a congress, spoke rarely in scientific societies, and then only when he had a new idea to report. As president of the Vienna Ophthalmological Society, his personality lent it the greatest weight, imbued it with life and kept the interest of its members astir, even if they did not share his opinions.

Only in the last years Schnabel came forth from his retirement and in public took a decisive stand for his convictions. At the last elections for the Reichstag he fought with great force for the ideals which had made him a supporter of the free school. The uprightness of his character, the absolute truthfulness which showed in his words and acts were bound to win acknowledgment even from his antagonists. The integrity of his character, combined with rich mental gifts, with his broad knowledge and shining talent as an orator, stamped Schnabel as an uncommon personality, the all too early loss of which all must deplore.

MEDICAL SOCIETIES.

OPHTHALMIC SECTION

ST. LOUIS MEDICAL SOCIETY.

Meeting June 10, 1908.

Dr. A. E. Ewing, presiding.

Regeneration of the Cornea. (Report of case.)—By Dr. Henry L. Wolfner.

Mrs. T., aet 32, presented herself for treatment with gonorrhœal ophthalmia O.D.; O.S. had been enucleated in childhood, and she wore an artificial eye. Socket of O.S. was also infected with gonococci. When first seen there was ulceration of the cornea O.D. which progressed until, in seven days the entire cornea down to Descemet's membrane was destroyed. Dr. Wolfner did not believe there was any hope of preserving vision and Dr. Alt, who saw the case in consultation, was of the same opinion. Treatment consisted of flushing the eye with a 1:5000 bichloride solution and dusting in xeroform powder. Potassium iodide was given internally. Regeneration set in, and as a final result, there is a clear cornea except for a faint cloud just below the centre; slight tendency toward keratoconus and small deposit on anterior capsule. One small posterior synechia. Vision 14/120.

DISCUSSION.

Dr. Post thought that possibly the elimination of the iodine in conjunction with the xeroform had something to do with the clearing up of the cornea.

Dr. Llewellyn Williamson asked how long this regenerative process continued.

Dr. Henry L. Wolfner replied that the cornea was practically regenerated within six weeks or two months, but it was not perfectly clear at first. It continued to clear up until about a year ago. Since then there had been no change.

Cataract Operation Complicated by Dacryocystitis.—By Dr. M. H. Post. (See December number, 1908.)

DISCUSSION.

Dr. Meyer Wiener reported a case almost the counterpart of Dr Post's. The patient, a man 81 years old, had a dacryocystitis

and cataract. The other eye had been operated on for cataract a year before with excellent result, but six months later he had lost the eye from an attack of acute glaucoma. Dr. Wiener treated the dacryocystitis and tried to get rid of the pus, but did not altogether succeed. The man was weak, he needed to get out into the fresh air and was unable to do so except when he could find some one to accompany him. For this reason it seemed that something must be done. Both puncta were tied off with black silk thread and two or three days later an extraction of the lens in the capsule was performed. The eye healed without any complication. The resulting vision was 14/30. About the tenth or eleventh day after the operation pus began to form again, but fortunately it did not infect the wound and the result was a very good eye.

Dr. Llewellyn Williamson thought that in a case of this kind, while the ligation of the puncta was the simplest procedure, an excision of the sac should be seriously considered, for there was the possibility of an overflow of pus into the conjunctival sac and he could think of nothing more disastrous than an infection or even a corneal ulcer in such a case, especially where the patient had but one eye left. For this reason he considered an excision of the sac the wisest procedure in cases of this kind.

Dr. Post said that in Dr. Wiener's case and in his own, an extirpation of the sac would have to be considered very seriously before attempting it. His patient had had asthma and was very nervous and it was questionable whether she would have come through such an operation, although of course, there was on the other hand the possibility of blindness to be considered.

A New Knife for Dividing Membranes Obstructing the Pupil after Cataract Operations.—By Dr. M. H. Post. (See July number, 1908.)

DISCUSSION.

Dr. Alt, after seeing Dr. Post's knife, had had some made, although he believed his had a slightly different curve than appeared in the drawing by Dr. Post. It worked exceedingly well, because the knife was extremely sharp. It cut splendidly and the opening in the cornea was perfectly blocked so that there was no escape of the aqueous.

Dr. Wiener thought that the operation of capsulotomy was a very serious one. The best results that he and Dr. Wolfner

had secured had been with the Ziegler operation, making a V-shaped incision with a sawing movement. He believed this sawing movement was the secret of getting through tough membranes.

Dr. Post Demonstrated a Mouth Bib of Gauze.

DISCUSSION.

Dr. Alt said that since February, when a patient, upon whom he had operated, developed an infection at the same time that he had developed a tonsillitis, bacteriological examination showing both to be due to the pneumococcus, he had been using a bib. He had found that this had one disadvantage when he operated with glasses on, since as he stooped over the patient his breath dimmed the glasses. By using Berger's magnifying lenses, as he is in the habit of doing, especially in operations on the eyeball itself, this does, of course, not occur. But he would never again operate without a bib. He thought that the use of 6 or 8 thicknesses of sterile gauze, which after the operation are thrown away, is preferable to a mask which is used over and over again.

Dr. Ernst Saxl said that covers for the mouth were not of recent date. The most practical one he had seen had been used in Vienna for seven or eight years. It looked like an oval chloroform mask. It fitted over the nose at an angle like a chloroform mask leaving the eyes free, and it fastened with spectacle hooks over the ears. It was simple, easily sterilized and easily attached.

ABSTRACTS FROM MEDICAL LITERATURE

By J. F. SHOEMAKER, M.D.,

ST. LOUIS, MO.

TREATMENT OF CHRONIC TRACHOMA.

A. E. Prince (*Jour. A. M. A.*, April 25, 1908) believes trachoma to be caused by a germ and contagious. In the treatment of the chronic form he says the principal considerations are: First, select a germicide which is effective; second, prepare the infected surface in such a manner that the germicide may act; third, combat corneal complications (pannus and ulcers); fourth, correct the condition of the lids which may cause relapsing inflammation (entropion, cysts, etc.). The remedies which he has found of most value are copper sulphate, silver nitrate, mercuric oxid, tannic acid, boric acid and jequirity. The first two of these have been more frequently used in this disease than any other remedies; the copper, when there is no secretion, and the silver when secretion is present. Prince's favorite method of using copper sulphate is to make a ten per cent solution of it in glycerin, which keeps indefinitely, and give the patient a small vial of this, having him dilute one drop of it with twenty drops of water each time it is used. This should be dropped into the eyes four to six times daily and as the eyes become tolerant to it the strength may be increased, some patients being able to use it as strong as 1:5. He believes that this is the best remedy for patients to use at home and thinks the frequent use of this weak solution of copper is more efficient than the occasional use of the solid stick. Glycerole of tannin, 4 per cent., and yellow oxid of mercury ointment, 1½ per cent., are also favorite remedies. When there is a muco-purulent secretion nothing acts so well as silver nitrate in about ½ per cent. solution used once daily.

He believes that it is highly important to remove the trachoma granules by the use of Knapp's roller forceps or some other form of forceps in order that the medicines employed may reach the deeply-seated infection. In doing this he uses chloroform or ethyl chloride anesthesia in cases where there is much active inflammation, and cocain, used locally, where no particular irritation exists. He injects the cocain solution sub-conjunctivally

in the retrotarsal folds, often adding 10 per cent. of 1:1000 solution of adrenalin chloride to the cocain solution. In non-inflammatory cases practically complete anesthesia may be obtained by inserting a roll of cotton moistened with 10 per cent. solution of cocain in 1:15000 adrenalin into the retrotarsal folds. The 10 per cent. solution of copper sulphate in glycerin should be rubbed in thoroughly after the granules have been squeezed out, washing away the excess of the solution. He emphasizes the importance of using medicinal remedies after operative procedures have been employed. Corneal ulcers complicating trachoma are best treated by cauterizing them with the thermocautery or some chemical, as trichloracetic acid, and the active treatment of the trachoma, as the ulcers do not heal well until the infection has been gotten under control. Prince is very partial to the use of jequirity in severe cases of pannus. He begins with a $\frac{1}{4}$ of 1 per cent. infusion, using this twice daily for several days when the strength may be increased if there is not too severe a reaction. He has never had any bad results from its use in this manner. The infusion should be made fresh every day, as it soon becomes contaminated with micro-organisms.

For the entropion which often results from neglected cases of trachoma, Prince advocates the Anagnastakis operation. In cases where the lids have cysts, nodules and cicatricial bands, which cause recurrent ulceration, he advises the excision of the tarsus, a brief description of which operation he gives.

SUDDEN BLINDNESS AND ITS VARIOUS CAUSES.

M. Buchanan (*N. Y. Med. Jour.*, April 25, 1908) discusses the different causes of sudden blindness in both eyes, in one eye, and of partial blindness coming on suddenly, not taking into account cases caused by traumatism. Binocular blindness may be caused by uremic conditions, methyl alcohol poisoning, malarial poisoning, quinin and lead poisoning, excessive hæmorrhages, particularly from the stomach, and temporarily from certain brain tumors; malingering, and mind, psychic, or object blindness also represent this class of cases. Hysterical blindness is usually unilateral. Embolism of the central artery of the retina, thrombosis of the central vein, detachment of the retina, and hæmorrhage into the vitreous are causes of sudden monocular blindness.

Acute glaucoma, which also causes monocular blindness, may be distinguished from other causes by the severe pain and hardness of the eyeball found in this condition. Hæmorrhage into the optic nerve sheath may cause blindness. This usually disappears with the absorption of the blood. Conditions which usually produce complete blindness may at times cause sudden partial loss of vision. The author discusses these different conditions with the view of differentiating them from malingering, and also considers snow blindness, electric ophthalmia, transitory hemianopsia and choroiditis.

FAMILIAL OPTIC NERVE DISEASE.

Fortunati and G. Mingazzini (*Policlinico*, March, 1908), professors of ophthalmology and neuropathology at Rome, have made a careful study of optic neuritis occurring in two brothers and in a brother and sister in another family. There were no evidences of a hereditary tendency. In their study of the subject they find that the twentieth year is the time when the symptoms develop in the largest number of cases, although they have appeared at ages ranging from five to sixty-seven years. Usually the condition appears at about the same age and the form of the disease is similar in all the affected members of a family. The use of alcohol, etc., by the parents had no appreciable ætiological influence. In one case the vision was permanently reduced to 1/30 by the bilateral retrobulbar neuritis, while in his brother, similarly affected, vision of 1/40 gradually improved to 1/3 under alternating sub-cutaneous injections of pilocarpin and strychnin, combined with the administration of iodid internally, hydrotherapy and rest. In the other family both cases improved decidedly under this same treatment and the use of the galvanic current to the eyes.

PROGNOSIS AND TREATMENT OF DEEP LESIONS OF EYE ASSOCIATED WITH GOUT, ESPECIALLY SECONDARY ACUTE GLAUCOMA.

C. S. Bull (*Medical Record*, December 19) believes that grave lesions of the retina and choroid are increasing in frequency, and as they are very destructive of vision there should be co-operation of the family physician and the ophthalmologist in the treatment of these conditions. Such patients are usually past middle

age, decidedly gouty and lead very strenuous lives. In his cases the intraocular inflammation was never coincident with an acute arthritic attack but was always followed by an intestinal attack and the urine contained great excess of uric acid and high percentage of indican, showing faulty metabolism of fermentative intestinal origin. All of the patients presented cardiovascular changes characteristic of chronic lithemia. Prominent among the pathologic changes is increased blood pressure which is responsible for increased intraocular tension and consequent hæmorrhages into the eye. The hæmorrhages are an early symptom of the disease and occur less frequently after the vessels have become thickened by the disease. In these cases the chief danger is the development of acute glaucoma. This is more likely to happen in the hypermetropic or pronouncedly astigmatic eye. In the management of these cases the age, general condition, nature of the lesion, and severity of the type must be taken into account. It is necessary to regulate the habits of life, avoiding too much activity or immoderation in eating and drinking, and meats should be largely eliminated from the diet. Bull allows the moderate use of alcohol, since it does not increase blood pressure, although it does dilate the peripheral blood vessels. As tobacco does increase the blood pressure it should be prohibited. Water should be taken freely between meals and systematic outdoor exercise should be encouraged. For the reduction of blood pressure sodium nitrite in combination with heart tonics does good. Vasodilators are to be employed where the blood pressure is very high, watching carefully their effects on blood pressure, pulse rate, and sensations of the patient. Pilocarpin in 0.5 per cent. to 1 per cent. solutions should be used to contract the pupil and reduce the tension of the globe. General anæsthesia is necessary to perform an iridectomy in an acutely inflamed eye, the danger of administering this naturally being increased on account of the patient's general condition. In such cases Bull has avoided doing an iridectomy by the following procedures: After using a strong solution of cocain locally, he performs a paracentesis of the cornea, allowing the aqueous humor to escape drop by drop from the anterior chamber in order to avoid intraocular hæmorrhage by a sudden reduction of the tension. Then two leeches are applied to the temple. A solution of eserine sulphate, one grain, and of pilocarpin, four grains, is instilled every hour until the eye becomes soft and less

painful under the combined influence of the paracentesis and the use of the miotics, when the drops are used less frequently. Hot applications to the eye are also used and twenty drops of the fluid extract of jaborandi given three times daily.

CONNECTION BETWEEN THE NOSE, ACCESSORY CAVITIES AND THROAT AND OCULAR AFFECTIONS.

H. Kuhnt (*Deutsche Medizinische Wochenschrift*, September 17) reviews briefly the relations between the eye and the nose, throat and accessory sinuses, pointing out that disturbing causes may be mechanical, reflex, by contiguity, and by disturbance in the circulation. He summarizes his large experience as professor of ophthalmology at Königsberg. Affections of the lacrimal duct were of nasal origin in 93.7 per cent. of his cases, and he requires treatment of the nose and sinuses as indicated before making a prognosis. A nasal affection was also discovered in 65.5 per cent. of 443 cases of trachoma in his experience. Exophthalmus has subsided after the removal of adenoids. A possible explanation of this he thinks is that besides the thyroid, other organs, like the tonsils, may have their normal functioning so changed that morbid products are formed or toxins are not neutralized. In every case of thrombosis of the central vein of the retina and in one case of thrombosis of the artery he has found an old empyema of the antrum. Irritating substances passing into the anterior portion of the eye may cause an exudation in the vitreous which, later contracting, might possibly cause a detachment of the retina. He insists on the importance of examining the central color perception in differentiating sinusitis, one of the first ocular signs of this condition being a change in the perception of the red and green. The pericentral scotoma may form a closed or a broken ring, and blend gradually into the intact peripheral field. Empyema of the sinuses may cause such functional disturbances as muscular asthenopia, subnormal accommodation, and reduction in the visual field.

In 20 per cent. of Kuhnt's cases of empyema he found the visual field restricted for colors or for white alone. He believes these disturbances are caused by the products of suppuration, absorbed either through the mucosæ of the nose, throat or sinus or after they are swallowed.

CYCLODIALYSIS VERSUS IRIDECTOMY.

P. J. Livingstone (*Jour Mich. State Med. Society*, November, 1908) believes the source of increased tension in the eye is principally, if not wholly, in the ciliary portion of the uveal tract. He describes Heine's operation of cyclodialysis and believes that this operation should be done instead of iridectomy in those cases where the latter operation is both difficult and dangerous.

PRINCIPLES UNDERLYING THE OPERATIVE TREATMENT OF STRABISMUS.

Edward Jackson (*Jour. A. M. A.*, January 2) summarizes his article thus:

The ocular movements are executed and controlled by nerve impulses, originated and guided by visual impressions. When these nerve impulses are faulty and cannot otherwise be sufficiently modified to produce normal movements, readjustment by operative treatment may be resorted to. This readjustment may be accomplished: (1) By giving greater effect to certain impulses, advancing the insertion of a muscle; (2) by diminishing the effect of certain impulses through tenotomy, setting back the insertion of a muscle; (3) by transferring the impulses so that they will produce results different from those to which they were originally directed, lateral displacement of insertions; (4) by combining two or all of these changes.

Tenotomy allows retraction of the tenotomized muscle and also retraction of its opponent which is no longer resisted. The increase of power secured by muscular advancement may be temporary or illusory. Only modified nerve impulses are required to increase or diminish the power of any muscle. All muscle operations, temporarily suspending function, are followed by degenerative changes in the muscle substance.

Operation on a muscle should be undertaken only after careful consideration of all the movements in which it takes part, either as a primary or secondary rotator of the eyeball. The more important object in the treatment of strabismus is to bring about a muscular equilibrium. Static equilibrium so that muscular rest will leave the two eyes fixing the same point in a central position, and dynamic equilibrium, balanced movements, easy binocular fixation of greatest usefulness around

this central point. A less important object is to secure movements, from this central point, of greatest range and with the least expenditure of effort. Where these objects are not attainable by increasing the power of a certain muscle or muscles they are to be sought by diminishing the power of opposing muscles or by transference of muscular power from one movement to another.

REVIEWS.

LEHRBUCH DER AUGENHEILKUNDE. (Textbook on Ophthalmology.) By Dr. Theodore Axenfeld, with the collaboration of Bach, Bielschowsky, Elschnig, Greef, Heine, v. Hippel, Krueckmann, Peters and Schirmer. With 10 colored plates and 455, mostly colored, illustrations. Jena, Gustav Fischer. 1909. Price 14 mark; bound 15 mark.

A book published by this well-known author and teacher, with such an array of collaborators must at once arouse our highest expectations, and looking through it they are realized to the fullest. While giving everything necessary for the student and for help to the general practitioner the book is not burdened by references and such details as more especially concern the practitioner in ophthalmology alone. The very numerous and throughout excellent illustrations are of especial value.

This book cannot fail of success. It stands out pre-eminently among the numerous textbooks on ophthalmology which fill our shelves, being in many ways superior to most of them.

DIATHESIS AND OCULAR DISEASES. By A. Maitland Ramsay, M.D., London. Baillière, Tindall & Cox. 1909.

A collection of clinical lectures delivered by the author at the Glasgow Ophthalmic Institution in 1908, in which he gives chiefly his own experience concerning the different diatheses as causes of eye affections. In this manner even an old subject can be revived so as to arouse interest anew, because personal experiences always have within them an element of attraction. It goes without saying that the gifted author and painstaking observer has given us a volume which oculists can well enjoy and by which students can greatly profit.

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